Detection and quantification of human colon MeIQx adducts after oral MeIQx administration using accelerator mass spectrometry (AMS) or ^{32}P-postlabelling. Mauthe R J., Dingley, K H., Leveson S H[†]., Vogel J S., Garner R C[a]., Turteltaub K W. Lawrence Livermore National Laboratory, Livermore, CA 94551, [a]Univ. of York, York Y01 5DD, United Kingdom and [†]York District Hospital, York YO3 7HE, United Kingdom.

The food mutagen and carcinogen 2-amino-3,8-dimethylimidazo[4,5-*f*]quinoxaline was administered *per os* (MeIQx, 228 μg; 370KBq/person) to two elderly human volunteers previously diagnosed with colon cancer. 4-6 Hours after ^{14}C-MeIQx ingestion, normal and tumour colon were surgically removed and a sample of blood collected. Analysis of purified colon DNA by AMS revealed a mean adduct level of ~1 adduct/ 10^9 bases, with tumour and normal tissue having similar adduct levels. HPLC analysis of DNA digests indicated 95% of adducts to be N-(deoxyguanosin-8-yl)-MeIQx. ^{32}P-Postlabelling of the colon DNA samples revealed three adduct spots with similar chromatographic properties to those seen in rat liver DNA from animals dosed with MeIQx. Low levels of haemoglobin adducts were detected in the blood of the dosed individuals (~20-100 pg MeIQx/ g Hb). These results show that MeIQx is bioavailable to human colon and that MeIQx DNA adducts are formed in substantial quantities. This work was supported by the DoE (W-7405-ENG-48) at LLNL and partially by NIH (CA66861), USAMRDC (MM4559FLB) and the United Kingdom MAFF (FS1722)